

ANNUAL RESEARCH PROGRAMME OF BOTANICAL SURVEY OF INDIA OTHER THAN FLORA OF INDIA (2019 – 2020)

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
1.	Pteridaceae of India (excluding Genus <i>Pteris</i>) Dr V. K. Rawat, Scientist-D (ca 54 species excluding 41 species of Genus <i>Pteris</i>)	2018 – 2022	Q1. Identification and documentation of specimens collected earlier. Q2. One Herbarium Consultation Tour to CNH and DD and one field tour to west and east Kameng. Identification and documentation of collected specimens Q3. One field tour to protected areas of Meghalaya (Nokrek Biosphere Reserve). Identification & documentation of collected specimens. One Herbarium Consultation Tour to ASSAM and BSA Q4. One field tour to protected areas of Assam (Kaziranga National Park and Dibru Saikhowa National Park). Identification and documentation of collected specimens Total: 3 Field Tours and 2 Herbarium Consultation Tours
2.	Materials of the Flora of Arunachal Pradesh Vol. 4 ▪ Dr. M. R. Debta, Scientist C ▪ Dr. Krishna Chowlu, Scientist C ▪ Dr. U.K. Tiwari, Scientist C New Project	2019 – 2020	Complete the checklist along with updated nomenclature and distribution of all additional species reported from Arunachal Pradesh not included in earlier Floristic account of the state

Note: In addition to above, Dr. Krishna Chowlu and Dr. U. K Tiwari are to submit the final reports of the projects namely, 'Red Listing of Orchids of Arunachal Pradesh as per IUCN criteria' and 'Flora of Eastern Kameng – Arunachal Pradesh' respectively by 31st July 2019

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	1	1	1	3
Herbarium Consultation Tour	0	1	1	0	2

EASTERN REGIONAL CENTRE, SHILLONG

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
3.	Flora of Nagaland (Vol. 1 & Vol. 2). ▪ Dr. N. Odyuo, Scientist D ▪ Dr. D.K. Roy, Botanist ▪ Dr. David Lalsama Baite, Scientist B (under guidance of Dr. A. A. Mao) ● Vol. I: Ranunculaceae to Asteraceae (Approx. 1500 taxa) by March 2020. ● Vol. II & III: Campanulaceae to Ceratophyllaceae and Hydrocharitaceae to Poaceae (Approx. 1500 taxa) by March 2021.	2016 – 2021	Q1. One field tour to Phek district. Identification and documentation of collected specimens. Q2. One field tour to Wokha and Mokokchung district. Identification and documentation of collected specimens. Q3. Identification and documentation of collected specimens. Q4. Herbarium Consultation Tour to CNH for 10 working days. Total: 2 Field Tours and 1 Herbarium Consultation Tour
4.	DNA barcoding and phylogenetic analysis of 20 selected endemic plant species of North East India and Phytochemical Screening of 11 medicinal plants ▪ Dr. Deepu Vijayan, Scientist C ▪ Dr. Dilip Kr. Roy, Botanist	2017 – 2020	Q1. Quantitative phytochemical analysis of selected medicinal plants using spectroscopy Q2. Collection tour to Dawki, Meghalaya. Quantitative phytochemical analysis of selected medicinal plants using UHPLC. Q3. DNA barcoding of selected endemic plant species Q4. Final report preparation Total: 1 Local Field Tour
5.	Diversity and phylogeny of Aquatic fungi from North east India Dr. Ashish V. Prabhugaonkar, Scientist C	2018 – 2020	Q1. Molecular phylogenetic analysis of selected isolates. Q2. One field tour for collection and isolation of fungi from streams in Jaintia hills. Molecular phylogenetic analysis of selected isolates. Q3. One field tour for collection and isolation of fungi from streams in West Khasi hills and East Garo hills. Q4. Compilation of work and submission of final report. Total: 2 Field Tours
6.	Micropropagation of RET Plants of North East India in ERC, Shillong ▪ Miss I. Chanu, Botanist ▪ Dr. Deepu Vijayan, Scientist B	On going	Development of culture protocols for <i>Ilex khasiana</i> , <i>Paphiopedilum hirsutissimum</i> and <i>Rhododendron coxianum</i> . Maintenance of existing culture in all Quarters. <u>Target:</u> Maintenance of existing culture in all Quarters. Hardening and introduction of the seedlings in the Garden.

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
7.	Ex-situ conservation & multiplication of endemic, rare, threatened and economically important plants of NE India at Experimental Botanic Garden, BSI, ERC, Barapani Dr. David, Scientist B and Shri L.R. Meitei, B.A.	On going	Recording of phenological data of plant species growing in EBG, Barapani and multiplication of RET species in all four quarters. One field tour in 3 rd Quarter to Khasi Hills, Meghalaya for collection of live plants of RET species. Total: 1 Field Tour

Note: In addition to the above, Dr. N. Odyuo, Scientist D is to submit the final report of project namely 'Flora of Eastern Nagaland' by 31st July 2019. Besides, Dr. Chaya Deori, Scientist D is to submit the final report on 'Flora of West and South West Khasi Hills district of Meghalaya' by 31st July, 2019 positively.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	1	3	2	0	6
Herbarium Consultation Tour	0	0	0	1	1

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOKE

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
8.	Taxonomic revision of <i>Impatiens</i> L. (Balsaminaceae) of Sikkim & Darjeeling Himalaya Dr. Rajib Gogoi, Scientist E	2017 – 2020	Q1. Identification and documentation of earlier collections Q2. One field tour to Darjeeling & West Sikkim for specific collection of <i>Impatiens</i> . Identification and documentation of specimens collected Q3. One field tour to North & East Sikkim for specific collection of <i>Impatiens</i> . Identification and documentation of specimens collected Q4. Finalisation and submission of report. Total: 2 Field Tours

Note: In addition to the above, Dr. D. K. Agarwala, Scientist D is to submit the final report of the project namely 'Redlisting of Orchids of Eastern Himalayas as per IUCN criteria' by 31st July 2019 positively.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	1	1	0	2
Herbarium Consultation Tour	0	0	0	0	0

CENTRAL REGIONAL CENTRE, ALLAHABAD

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
9.	SEM studies of the species belonging to family Acanthaceae available at BSA Dr. Nitisha Srivastava, Botanical Assistant	2018 – 2021	To examine seeds and epidermal features of 24 species (6 species in each quarter) belonging to the family Acanthaceae available in BSA
10.	Revision of Genus <i>Adiantum</i> L. (Adiantaceae) in India (28 species) Dr. Brijesh Kumar, Botanist	2016 – 2020	Q1. Identification, dissection and preparation of Illustration. Q2. One Herbarium Consultation tour to PAN, PUN, DD and BSD herbarium for critical study of specimens. Q3. One Herbarium Consultation tour to LWG herbarium for critical study of specimens. Q4. Finalisation and submission of final report. Total: 2 Herbarium Consultation Tours

Note: In addition to the above, Dr. G. P. Sinha, Scientist E is to submit the final report of the projects namely 'Floristic Diversity of Kishanpur WLS' and 'Floristic Diversity of Alwar Wetland' by 31st July 2019. Besides, Dr. A. K. Verma is to submit the final report of the project namely "Cyto-taxonomical studies of selected taxa of India sub-tribe Cassinae" by 31st July 2019 positively.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	0	0	0	0
Herbarium Consultation Tour	0	1	1	0	2

NORTHERN REGIONAL CENTRE, DEHRADUN

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
11.	Flora of Sechu Tuan Nala Wildlife Sanctuary, Chamba District, Himachal Pradesh Dr. Puneet Kumar, Scientist C	2017 – 2020	Q1. Identification and documentation of specimens collected from earlier field tours. Q2. One field tour to the under explored areas of the sanctuary. Identification of collected specimens. Q3. Identification and documentation of specimens collected. Q4. Finalization and submission of manuscript. Total: 1 Field Tour

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
12.	Documentation and database of Alien Invasive species of Himachal Pradesh (North Western Himalaya) Dr. K. S. Dogra, Scientist D	2017 – 2020	Q1. Listing of species from literature and Herbarium data Q2. Survey and collection tour to different areas of NW Himalayas to collect alien invasive species. Q3. Identification of invasive species. Preparation of database. Q4. Finalization and submission of manuscript. Total: 1 Field Tour
13.	Flora of Himachal Pradesh Volume I		
	Ranunculaceae – Papavaraceae (Estt. Spp.: 161) ▪ Dr S.K. Singh, Scientist E* ▪ Sri P.K. Deroliya, Botanical Assistant (*Earlier Dr Kumar Ambrish)	2017 – 2020	Listing of species from published literature and herbarium and documentation of 53 species. One herbarium consultation tour to RRLH, PLP, Herbarium of Jammu University, Jammu, Herbarium of Himalayan Forest Research Institute, Shimla in Q3. Finalization and submission of manuscript. Total: 1 Herbarium Consultation Tour
	Geraniaceae – Moringaceae (Estt. Spp.: 155) Sri Sachin Sharma, Botanical Assistant	2017 – 2020	Listing of species from published literature and herbarium and documentation of 40 species. Finalization and submission of manuscript.
	Portulacaceae – Zygophyllaceae (Estt. Spp.: 70) Sri Sameer Patil, Botanist* (*Earlier Dr. M.R. Debta)	2017 – 2020	Listing of species from published literature as well as from Herbarium and documentation of 40 species. Finalization and submission of manuscript.
	Brassicaceae – Caryophyllaceae (Estt. Spp.: 148) Dr. K.S. Dogra, Scientist D	2017 – 2020	Listing of species from published literature as well as from Herbarium and documentation of remaining 48 species. Finalization and submission of manuscript.
	Fumariaceae; Capparaceae – Polygalaceae (Estt. Spp.: 50) Dr. Puneet Kumar, Scientist C	2017 – 2020	Listing of species from published literature as well as from Herbarium and documentation of remaining 11 species. Finalization and submission of manuscript.
	Flora of Himachal Pradesh Volume I Introduction Part ▪ Dr. S. K. Singh, Scientist E, ▪ Dr. Puneet Kumar, Scientist C, ▪ Dr. K. S. Dogra, Scientist C ▪ Dr. P. K. Deroliya, Botanical Assistant	2019 – 2020	Literature survey, data collection and analysis, selection of photographs. Writing, finalization and submission of final report
14.	Pictorial Flora of Pteridophytes of Uttarakhand Dr. B. S. Kholia, Scientist D	2018 – 2021	Q1. One survey and collection tour to lower elevation of Kumaon and identification of collected species. Q2. One survey and collection tour to middle elevation of Garhwal and identification of collected species. Q3. One survey and collection tour to higher elevation of Garhwal and identification of collected species. One herbarium consultation tour to PUN, PAN & DD and identification and work out identified species. Q4. One survey and collection tour to lower elevation of Uttarkashi. Identification & documentation of specimens. Total: 4 Field Tours and 1 Herbarium Consultation Tour
15.	Micropropagation of endangered species of <i>Tricholepis roylei</i>, <i>Jasminum parkeri</i> and <i>Eulophia dabia</i> (Orchidaceae). ▪ Dr. Giriraj Singh, Scientist C ▪ Dr. Bhavna Joshi, Botanist	2018 – 2020	Screening of plant growth regulators for the multiple shoot induction and proliferation of roots. Hardening and acclimatization of <i>in vitro</i> regenerated plantlets in the green house. Shifting of the acclimatized plants in the field
16.	Ex-situ conservation of endemic threatened and economic plant species in the associated garden of NRC and documentation of monthly data on flowering and fruiting ▪ Dr. S. K. Singh, Scientist E ▪ Dr. B.S. Kholia, Scientist D ▪ Dr. K.S. Dogra, Scientist C ▪ Sri P.K. Deroliya, Botanical Assistant ▪ Shri Sachin Sharma, Botanical Assistant	On going	Tours to Biodiversity rich areas of Uttarakhand for collection of threatened and economically important plants species. <i>Maintenance</i> of germplasm collected. Documentation of data on phenology of species growing in the botanic garden. Target for collection of economic and threatened species: 10

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	1	3	1	1	6
Herbarium Consultation Tour	0	0	2	0	2

ARID ZONE REGIONAL CENTRE, JODHPUR

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20			
17.	Flora of Jambhughoda Wildlife Sanctuary, Gujarat (Area 130.38 sq. km.) Dr. S.L. Meena, Scientist D (under order of transfer to BSI – Hqrs.)	2017 – 2020	Q1. Identification, inventorisation and documentation of specimens collected in previous tours. One field tour to the under explored areas of the sanctuary Q2. Identification, inventorisation and documentation of specimens collected in previous tours. One Herbarium Consultation tour to Dept. of Biosciences, M.S. University, Vadodara Q3. Preparation of the report. Q4. Finalisation and submission of the report. Total: 1 Field tour and 1 Herbarium Consultation Tour			
18.	Flora of Navsari District, Gujarat (Area 2,211 Sq. Km.) ▪ Dr. Ramesh Kumar, Scientist D (Under order of transfer to AJCBIBG) ▪ Sri Vinod Maina, Scientist D	2015 – 2020	Identification and documentation of Herbarium specimens. Finalization and submission of final report.			
19.	Flora of Todgarh-Raoli Wildlife Sanctuary, Rajasthan Dr. C.S. Purohit, Scientist C (Transferred to ANRC)	2015 – 2020	Identification of unidentified herbarium specimens. Finalization and submission of manuscript in December, 2019.			
20.	Vegetation characterization and floristic studies in Bassi Wildlife Sanctuary, Rajasthan using remote sensing and GIS (Area: 288 km²) Dr. P. Hari Krishna, Botanical Assistant	2017 – 2020	Q1. Identification and inventorisation of specimens collected in previous tours Q2. Identification, inventorisation and one HC tour to M.L.S. University Udaipur and Govt. College, Bhilwara. Q3. Preparation of the report. Q4. Finalisation and submission of the report. Total: 1 Herbarium Consultation Tour			
21.	GIS mapping of Endemic, Endangered and Threatened plants species of Rajasthan ▪ Dr. P. Hari Krishna, Botanical Asstt. ▪ Dr S. Misra, Scientist C	2017 – 2020	Finalisation and submission of the report.			
22.	Ex-situ conservation of RET and economically important species of the Arid region in the experimental Garden of AZRC and documentation of phonological data on flowering and fruiting ▪ Dr. S. Misra, Scientist C ▪ Dr V. Maina, Scientist D	On going	Saplings of 10 RET and economically important species to be collected during each of the two field tours (to be conducted in the 2 nd and 3 rd quarter of 2019 – 20) for <i>Ex-situ</i> conservation in the Experimental Garden of AZRC and documentation of phenological data on flowering & fruiting. Total: 2 Field Tours			
Nature of Tour		Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour		1	1	1	0	3
Herbarium Consultation Tour		0	2	0	0	2

DECCAN REGIONAL CENTRE, HYDERABAD

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
23.	Flora of Manjeera Wild Life Sanctuary, Telangana (Area: 20 km ²) Dr. L. Rasingam, Scientist D	2017 – 2021 (Extended upto 2022)	Q1. Identification and invetorisation of specimens collected in earlier tours. Q2. One field tour in August to the unexplored areas of the sanctuary. Identification of collected specimens. Q3. Two field tours in October and December to the unexplored areas of the sanctuary. Identification of collected specimens. Q4. One Herbarium Consultation Tour to CNH for consultation of literature and study of critical specimens collected in the earlier tours. Total: 3 Field Tours and 1 Herbarium Consultation Tour
24.	Grasses of Telangana State India Mr. S. Nagaraju, Botanical Assistant	2017 – 2021 (Extended upto 2022)	Q1. Identification and invetorisation of specimens collected in earlier tours. Q2. One field tour to the unexplored areas of the sanctuary. Identification of collected specimens. Two Herbarium Consultation tour to SKU, KU, HY Q3. Two field tour to the unexplored areas of the sanctuary. Identification of collected specimens. Q4. One field tour to the unexplored areas of the sanctuary. Identification of collected specimens. Total: 4 Field Tours and 2 Herbarium Consultation Tours

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
25.	Flora of Kinnerasani Wild Life Sanctuary, Telangana (Area: 635.40 km²) Sri J. Swamy, Botanical Assistant	2017 – 2021 (Extended upto 2022)	Q1. Identification and invetorisation of specimens collected in earlier tours. One field tour to the unexplored areas of the sanctuary Identification of collected specimens. Q2. One herbarium consultation tour to Osmania University, Hyderabad, & Kakatiya University, Warangal for critical study of collected specimens Q3. One field tour to the unexplored areas of the sanctuary Identification of collected specimens. Q4. One field tour to the unexplored areas of the sanctuary Identification of collected specimens. One herbarium consultation tour to MH Total: 4 Field Tours and 2 Herbarium Consultation Tour

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	1	3	5	2	11
Herbarium Consultation Tour	0	3	0	2	5

WESTERN REGIONAL CENTRE, PUNE

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
26.	Taxonomic studies of Micro-fungi of Sanjay Gandhi National Park, Maharashtra along with its 10 % peripheral area (Area: 103.84 km²) Dr. Rashmi Dubey, Scientist E	2016 – 2020	Q1. Isolation, identification and characterisation of fungal species collected from different substrates Q2. Isolation, identification and characterisation of fungal species collected from different substrates & statistical analysis. Q3. One field Tour to the sanctuary for collection of micro-fungi. Isolation, identification and characterisation of fungal species collected from different substrates & statistical analysis. Q4. Preparation and submission of final report Total: 1 Field Tour
27.	Floristic Diversity of Wan Wildlife Sanctuary Dr. Priyanka Ingle, Scientist B	2016 – 2020	Finalisation and submission of final report
28.	Flora of Pushpagiri WLS, Karnataka Sri Samir Patil, Botanist (Transferred to NRC, Dehradun) Dr. P. Lakshminarasimhan, Scientist E	2016 – 2020	Critical identification of ca. 45 species. One Herbarium Consultation Tour to be conducted by Sri Patil to BSI, Pune in 2 nd quarter for processing of collected specimens. Ecological data analysis of shola grasslands. Preparation and submission of final report Total: 1 Herbarium Consultation Tour
29.	Pteridophytic Flora of Pushpagiri Wildlife Sanctuary, Karnataka with 10% Periphery ▪ Mr. D. Jesubalan, Bot. Assistant ▪ Dr. A. Benniamin, Scientist E (transferred to BSI – Hqrs.)	2016 – 2020	Q1. Identification and invetorisation of specimens collected earlier. Q2. One field tour to be undertaken to the Pushpagiri Wildlife Sanctuary. One Herb. Consultation tour to be undertaken to CAL. Q3. One Herbarium Consultation Tour to MH for critical study of collected specimens. Q4. Preparation and submission of final report. Total: 1 Field Tours and 2 Herbarium Consultation Tour
30.	Seed morphology and cyto taxonomy of some selected Orchids of Northern Western Ghats Mrs. A.M. Neelima, Botanical Assistant	2017 – 2020	Q1. Identification of the remaining species. Short tours to cover the gap in collection, microscopic and SEM studies of the remaining species, micro-morphometry of seeds to be carried out for analysis. Q2. SEM and Light microscopy of the collected specimens. Interpretation of the data. Short field tours to collect terrestrial orchids, micro-morphometry of seeds to be carried out for analysis. Q3. SEM and Light microscopy of the collected specimens. Interpretation of the data. Short field tours to collect specimen, micro-morphometry of seeds to be carried out for analysis. Q4. Interpretation of the data generated by SEM and Light microscopic studies. compilation of data and submission of final report

Note: In addition to the above, Dr. Sukumar Bhakta, Botanical Assistant is to submit the final report of the project namely 'Biodiversity Assessment of Micro-Algae from thermal springs of Maharashtra' by 31.07.2019. Besides, Dr. C. R. Jadhav, Botanist is to submit the final report of Flora of Karnataka Volume I by 31.07.2019

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	1	1	0	2
Herbarium Consultation Tour	0	2	1	0	3

SOUTHERN REGIONAL CENTRE, COIMBATORE

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
31.	Flora of Kodaikanal Wildlife Sanctuary, Tamil Nadu (Area: 736.9 km²) - Dr. K. Althaf Ahamed Kabeer, Scientist D (transferred to CBL) - Mr. A. Ravi Kiran, Botanical Assistant (deployed to DRC, Hyderabad)	2015 – 2020	The executing officials have been transferred as well as deployed to other offices. However, Sri Ravi Kiran will conduct one tour to the unexplored areas of the sanctuary in Q2. He will identify all the specimens by sitting there in SRC and then he will return back to DRC to prepare the final report in consultation with Dr. Altaf for submission by March 2020. Total: 1 Field Tour
32.	Flora of Kanniyakumari Wildlife Sanctuary, Tamil Nadu (Area: 402.39 sq. km). - Dr. Sujana. K. A., Scientist D* (Earlier Dr. J. H. Franklin) - Shri. Rakesh G Vadhyar, Bot. Asstt.	2015 – 2020	Q1. Identification & documentation of specimens collected earlier. Q2. One field survey to area in first week of July 2019. Identification and documentation of specimens collected. Q3. One field survey to the area in first week of November 2019. Identification & documentation of specimens collected. Q4. One field survey to the area in first week of February 2020. Identification and documentation of specimens collected. Finalisation and submission of final report Total: 3 Field Tours
33.	Floristic Assessment of Megamalai Wildlife Sanctuary, Tamil Nadu. (Area: 269 sq. km.) - Dr. C. Murugan, Scientist E - Dr. S. Arumugam Bot. Asstt.	2016 – 2020	Q1. Identification and documentation of earlier collection. One survey to unexplored area. Q2. Identification and documentation of earlier collection. One survey to unexplored area. Q3. Identification and documentation of earlier collection. One survey to unexplored area. Q4. Identification and documentation of specimens collected earlier. Compilation and submission of report. Total: 3 Field Tours
34.	Cyperaceae of Tamil Nadu - Dr. C. Murugan, Scientist E - Dr. S. Arumugam, Bot. Asstt.	2015 – 2020	Identification and documentation of all the specimens collected in earlier tours. One field tour to be conducted to the unexplored study areas in Q3. Identification and documentation of collected specimens. Compilation and submission of final report Total: 1 Field Tour
35.	Assessment of Plant diversity in Cauvery North Wildlife Sanctuary, Tamil Nadu (Area: 504.33 sq. km.) - Dr. R. Manikandan, Scientist D - Smt. Mehala Devi, R., Sr. Pres. Asst.	2017 – 2021	One field tour in each quarter to the unexplored and underexplored areas of the sanctuary. Identification and documentation of collected specimens. Total: 4 Field Tours
36.	Marine Macro Algal flora of India - Dr. M. Palanisamy, Scientist D - Dr. S.K. Yadav, Botanist* (* Transferred to BSI, Hqrs., Kolkata) New Project	2019 – 2022	Q1. Literature survey and Updating of data Q2. Updating of data and documentation from previous collections available at MH Q3. Updating of data from previous collections available at MH (by Dr. Palanisamy) and at CNH (by Dr. Sudhir Yadav). One field survey to Gulf of Mannar BR, Tamil Nadu. Q4. Updating of data from previous collections available at MH (by Dr. Palanisamy) and at CNH (by Dr. Sudhir Yadav). One field survey to Gujarat coast. Total: 2 Field Tours
37.	Ex-situ conservation of endemic endangered and threatened plants of the region and recording of phenology of species in the NOEG, Yercaud - Dr. S. Kaliamoorthy, Scientist D - Dr. T. S. Saravanan, Bot. Assistant	On going	Multiplication and maintenance of existing collections. One field tour to each in Q2 and in Q3 to Wayanad district, Kerala for collection of EET plants. Total: 2 Field Tours
38.	Ex-situ conservation of Endemic tree species of the region in NOEG, Yercaud - Dr. M.Y. Kamble, Scientist D - Shri. B. S. Elango, Bot. Assistant	On going	Multiplication and maintenance of existing collections. One field tour to each in Q2 to Agasthiyamalai Biosphere Reserve and one herbarium consultation tour to TBGRI, Thiruvanthapuram. Another field tour to Agasthiyamalai Biosphere Reserve and to Wayanad district, Kerala in Q3. Total: 2 Field Tours and 1 Herbarium Consultation Tour

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	2	6	7	3	18
Herbarium Consultation Tour	0	1	0	0	1

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
39.	Ex-situ conservation of RET species (Bamboos, Palms, Zingibers, endemic tree species) of Andaman & Nicobar Islands at Dhanikhari Exp. Garden cum Arboretum and raise nursery. - Dr. Chandan Singh Purohit, Scientist C - Dr. Vivek C. P., Botanical Assistant New Project	2019 – 2022	Q1. Literature survey, Herbarium Consultation. Multiplication and maintenance of previous collections. Q2. One field tour to be conducted at North Andaman. Multiplication and maintenance of previous collections. Q3. Literature survey, Herbarium Consultation. Multiplication and maintenance of previous collections. Q4. One field tour to be conducted at Great Nicobar Island. Multiplication and maintenance of previous collections. Total: 2 Field Tours
40.	Revision of the Lichen family Pyrenulaceae in India with special emphasis on lichens of A & N Islands Dr. T.A.M. Jagadesh Ram, Scientist D	2017 – 2022	Morphological, anatomical, chemical characterization and identification of earlier collections. One field tour to Kerala and Tamil Nadu in Q4. Total: 1 Field Tour
41.	Revision of Gymnosperms of Andaman & Nicobar Islands (Earlier Project: Revision of the family Cycadaceae in Andaman and Nicobar Islands) Dr. Lal Ji Singh, Scientist E	2018 – 2020	Q1. Literature survey and consultation of herbarium at PBL. One local field tour to be undertaken to South Andaman Islands. Q2. One field tour to be undertaken to Middle Andaman Islands. Q3. One field tour to be undertaken to North Andaman Islands. One herbarium and library consultation tour to be undertaken at CNH, Howrah. Q4. Finalization and submission of manuscript Total: 2 Field Tours and 1 Herbarium Consultation Tour
42.	Phenological survey of tree Species of Dhanikhari Experimental Garden-cum-Arboretum, Nayashahar with special emphasis on campus tree. Dr. Lal Ji Singh, Scientist E Sri B. C. Dey, Botanical Assistant	On going	Maintenance and recording of flowering and fruiting of tree species of Dhanikhari Experimental Garden (DEGCA), Nayashahar, South Andaman.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	2	1	2	5
Herbarium Consultation Tour	0	0	1	0	1

AJC BOSE INDIAN BOTANIC GARDEN, HOWRAH

Sr. No.	Name of the Project	Period	Quantifiable deliverables for 2019 – 20
43.	Enrichment of medicinal plant section (Charak Udyan) of AJC Bose Indian Botanic Garden through survey, collection and introduction of medicinal plants Dr. S. P. Panda, Scientist C	2015 – 2018 (Extended upto 2020)	Two ex-situ conservation Tours in Q2 and Q4 to Andhra Pradesh and North Bengal respectively to collect 20 medicinal plants from each tour for introduction in the medicinal plant section (Charak Udyan) of AJC Bose IBG. Total 02 Ex-situ conservation Tours
44.	Collection, documentation & ex situ conservation of Aromatic plants of India - Dr. M.U. Sharief, Scientist E - Dr. B. K. Singh, Botanical Assistant	2017 – 2020	Two tours in Q3 and Q4 to Jammu and Andaman & Nicobar Islands respectively to collect 15 aromatic plants from each tour for ex-situ conservation. Total 02 Ex-situ conservation Tours
45.	GIS phyto-mapping & digitization of shrubs and trees in AJC Bose Indian Botanic Garden - Dr. M.U. Sharief, Scientist E - Dr. C. M. Sabhapathy, Botanist - Dr. B. K. Singh, Botanical Assistant	On going	- Number labelling and GPS reading of the Trees and Shrubs of remaining 15 Divisions of AJCBIBG. - Labelling the Scientific names to the important trees and shrubs of AJCBIBG. - Updating and compilation of latest field data

Note: In addition to above, Dr. B. K. Singh, Botanical Assistant is to submit the final reports of the project namely 'Herbaceous Flora of AJCB IBG (Dicot and Monocot excluding Cyperaceae and Poaceae)' and 'Introduction of Mangroves associated plants in AJCB IBG' by 31st July 2019. Apart from that, Dr. S. S. Hameed, Scientist D is to submit the final project report of the project namely 'A re-assessment and revalidation of Phoenix loureiroi and its variants in India' by 31st July 2019. Besides, Smt. Nita Sarkar, Botanist is to submit the final report of the project namely 'Documentation of woody climbers of AJCB IBG' by 31st July 2019.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	1	2	1	4
Herbarium Consultation Tour	0	0	0	0	0

CENTRAL BOTANICAL LABORATORY, HOWRAH

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
46.	Ethnobotanical study of some tribal populated districts of Bihar Team I - Dr. Monika Mishra, Botanical Assistant - Dr. P. A. Dhole, Botanical Assistant Team II - Dr. K. Althaf Kabeer, Scientist D - Sri A. C. Halder, Botanist - Sri R. Saravanan, Botanist	2015 – 2020	Q1.Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Aurangabad (Area: 3305 Sq Km; Tribal Population: 1,640) and Nawada (Area: 2494 Sq Km; Tribal Population 2,158) by Team II. Q2.Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Kishanganj (Area: 1884 Sq Km; Tribal Population 47,116) and Araria (Area: 2830 Sq Km; Tribal Population 29,423) by Team I along with Sri R. Saravanan. Q3.Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Purnia (Area: 3229 Sq Km; Tribal Population 1,11,197) and Kathiar (Area: 3009 Sq Km; Tribal Population 1,40,418) by Team-II. Q4.Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Gaya (Area: 4976 Sq Km; Tribal Population 2,945) and Nalanda (Area: 2367 Sq Km; Tribal Population 970) by Team I along with Sri R. Saravanan. Total: 4 Field Tours
47.	Chromosome count of Genus <i>Impatiens</i> of Sikkim / Darjeeling Dr. Monika Mishra, Botanical Assistant	2018 – 2021	Chromosome studies of nine species of <i>Impatiens</i> to be done in the year 2019 – 20.
48.	Study of Micro-Algae and monitoring of water quality of all lakes of AJCB IBG Dr. (Mrs.) Pratibha Gupta, Scientist E New Project	2019 – 2020	4 – 5 samples to be collected from each lake of the garden per month to study the periodicity, succession, distribution and monitoring of micro-algae.
Note: In addition the above, Dr. Pratibha Gupta is to submit the final report of the project namely 'Study of micro-algae and monitoring of water quality of Lerum lake of AJCB IBG by 31 st July, 2019.			

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	1	1	1	1	4
Herbarium Consultation Tour	0	0	0	0	0

INDUSTRIAL SECTION INDIA MUSEUM, KOLKATA

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
49.	Collection of Economic Plant materials for enrichment & replacement of the Botanical Gallery Dr M. Bhaumik, Scientist E; Dr. Geeta Chaudhury, Botanist and Sri S.K. Sharma, Sr. Preservation Asstt.	2019 – 2020	One tour to Rajamundi, Andhra Pradesh in Q3 and one tour to Dinhata, West Bengal in Q4 for collecting Tobacco and others samples Total: 2 Field Tours
50.	Interpretation of Roxburgh Icones: Family: Orchidaceae Dr. M. Bhaumik, Sci. E & Dr. (Ms.) K. Pagag, Botanist	2018 – 2020	Updation of nomenclature and description to be completed and final report to be submitted by March 2020
51.	Studies on natural dye from some selected plants of West Bengal for dyeing cotton fabrics - Dr. M. Bhaumik, Scientist E - Dr. (Mrs.) S. Dutta, Bot. Asstt. New Project	2019 – 2020	5 plants to be worked out with 4 mordents (tentative taxa: <i>Cuscuta reflexa</i> ; <i>Rivina humilis</i> ; <i>Wedelia chinensis</i> ; <i>Lagerstroemia speciosa</i> ; <i>Dimocarpus longan</i> . 20 dyed cloth samples to be prepared during this period.
52.	Listing & Identification of 8000 Dicot herbarium specimens at BSIS - Dr. Geeta Chaudhury, Botanist - Sri S. K. Sharma, Sr. Preservation Asstt.	On going	All the documentation work to be completed. Final report to be submitted in September 2019.
Note: In addition the above, Dr. Kangan Pagag is to submit the final report of the project namely 'Interpretation of Roxburgh's Icon – Pteridophytes' by 31 st July 2019)			

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	0	1	1	2

CRYPTOGAMIC DIVISION, HEAD QUARTERS

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
53.	Studies on algal diversity in Hot Spring of Rajgir and Munger. Dr. R.K. Gupta, Scientist D	2017 – 2020	One field tour each in Q2 and Q3 to Rajgir and Munger hot springs. Study of the collected samples under microscope with image facility for taxonomic description along with microphotography. Diatoms samples to be studied under SEM for taxonomic description along with microphotography. Total: 2 Field Tours
54.	Liverworts and Hornworts Flora of Darjeeling District, West Bengal. Dr. Monalisa Dey, Scientist C	2016 – 2021	Q1. Identification, illustration, micro-photography of specimens collected earlier. Q2. Continuation of study, identification, illustration, microphotography and description of previously collected specimens. Q3. One field tour will be undertaken to Darjeeling district, West Bengal. Processing, preservation of collected specimens Q4. Continuation of study, identification, illustration, microphotography and description of previously collected specimens. One field tour will be undertaken to Darjeeling district, West Bengal. Total: 2 Field Tours
55.	Bryo-flora of Jharkhand Dr. D. Singh, Scientist D	2018 – 2022	Q1. Identification, camera lucida illustrations, microphotography of all the specimens collected earlier. Q2. Identification, camera lucida illustrations, microphotography of all the specimens collected earlier. Q3. One field tour to Godda, Sahibganj, Dumka districts including Rajmahal Hills (ca. 400 sq. km) and study of collected specimens. Q4. One field tour to Palamu, Lohardaga, Gumla districts including (ca. 600 sq. km) and study of the collected specimens. Total: 2 Field Tours
56.	Wood rotting fungi of Valmiki National Park Dr. Manoj Hembrom, Botanist	2018 – 2021	- Two field tours in Q2 and one field tour in Q3 to the area for collection of specimens. Macroscopic and microscopic characterisation, description, drawing and phylogenetic analysis of collected specimens to be done. - Two Herbarium consultation tour to be conducted to Punjabi University Patiala and Forest Research Institute Dehradun in Q4 Total: 3 Field Tours 2 Herbarium Consultation Tour
57.	Pteridophytes of Goa *Dr. A. Benniamin, Scientist E (*Transferred from WRC)	2018 – 2020	Two Field Tours to be undertaken in unexplored areas of Goa for collection of Pteridophytes in Q2 and Q3. Cytological studies to be done for the collected species of Pteridophytes. Spore Morphology for all the species is also to be done. Distribution Map to be prepared for all the species using QGIS Software. Preparation and submission of final report Total: 2 Field Tours
58.	Exploration of Caterpillar fungi in Himalaya: Morpho-taxonomy, Molecular phylogeny, Chemical & nutraceutical properties Dr. Kanad Das, Scientist E Dr. M. Hembrom, Botanist Sri Arvind Parihar, Bot. Asstt New Project	2019 – 2021	Two Field Tours to be undertaken to Kumaon Himalaya (Last district of India: Pithoragarh) and to Sikkim for collection of Caterpillar fungi in Q1 and Q2. Total: 2 Field Tours

Note: In addition to above, Dr. Kanad Das is to submit the final report of the project namely 'Study of wild mushroom of east and south Sikkim' by 31.07.2019

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	1	4	5	3	13
Herbarium Consultation Tour	0	0	0	2	2

PLANT CHEMISTRY DIVISION, HEAD QUARTERS

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20			
59.	Anti-nutritional Properties (oxalate, phytate, saponin and tannin content), Genotoxicity, DNA damage Preventive Activity, HPLC Studies for Vitamin and Phenolic Content of Wild Edible Plant of NE India Dr. Tapan Seal, Scientist D	2018 – 2022	45 Wild Edible Plants of NE India to be studied. One field tour in Q4 to be undertaken to N.E. India for collection of wild edible plants. Total: 1 Field Tour			
Nature of Tour		Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour		0	0	0	1	1

CENTRAL NATIONAL HERBARIUM, HOWRAH

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
60.	Angiospermic flora of Neora Valley National Park, Darjeeling, WB. (Area 159 Sq. Km.) - Dr. Vinay Ranjan, Scientist D - Dr. Gopal Krishna, Botanical Assistant - Dr. Anant Kumar, Botanical Assistant	2017 – 2021	Identification and description of earlier collections. One Field tour to the unexplored areas of national park in each quarter in Q1, Q2, Q3 and Q4 for plant collections. Identification and description of collections. Total: 4 Field tours
61.	Revision of the genus <i>Gastrochilus</i> (Orchidaceae) in India Dr. Avishek Bhattacharjee, Scientist C	2018 – 2021	Identification and description of earlier collections. One Field cum herbarium consultation tour to Western Himalaya in Q2. One Field-cum-herbarium consultation tour to Southern India in Q3. Total: 2 Field tours and 2 Herbarium Consultation Tours
<i>Note: In addition to the above, Sri P. P. Ghoshal, Botanist is to submit the final report of the project namely 'Flora of Betla National Park, Jharkhand by 31st July, 2019.</i>			

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	1	2	1	2	6
Herbarium Consultation Tour	0	1	1	0	2

PUBLICATION DIVISION, HEADQUARTERS

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019-20
62.	Interpretations of Roxburgh Icons in respect to current nomenclature: Families Bignoniaceae and Clusiaceae - Dr. Debasmita Dutta Pramanik, Sci. C - Dr. S. S. Dash, Scientist E	2018 – 2020	Listing of taxa of the families Bignoniaceae and Clusiaceae from authentic and current literature. Listing of taxa from Roxburgh icons. Study of herbarium specimens deposited in CAL and BSIS. Interpretation of remaining species of families Bignoniaceae and Clusiaceae. Submission of final report
63.	Flora of Eagle Nest Wild Life Sanctuary and its adjacent regions, West Kameng District, Arunachal Pradesh - Sri Sanjay Kumar, Botanist - Dr. S. S. Dash, Scientist E	2018 – 2022	Q1. Processing and identification of Herbarium specimens collected earlier Q2. One field tour to the west Kameng district for 20-25 days for collection of plant specimens. Processing and identification of collected specimens. Q3. One field tour to the west Kameng district for 20-25 days for collection of plant specimens. Processing and identification of collected specimens. Q4. Processing, identification and inventorisation of collected specimens. Total: 2 Field Tours

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours/ ex situ conservation tour	0	1	1	0	2
Herbarium Consultation Tour	0	0	0	0	0

SUMMARY OF TOURS

Regional Centre / Unit	Field Tour / <i>Ex situ</i> Conservation tour				Herbarium Consultation Tour / Library Consultation Tour			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
APRC	0	1	1	1	0	1	1	0
ERC	1	3	2	0	0	0	0	1
SHRC	0	1	1	0	0	1	1	0
CRC	0	0	0	0	0	1	1	0
NRC	1	3	1	1	0	0	2	0
AZRC	1	1	1	0	0	2	0	0
DRC	1	3	5	2	0	3	0	2
WRC	0	1	1	0	0	2	1	0
SRC	2	6	7	3	0	1	0	0
ANRC	0	2	1	2	0	0	1	0
AJCBIBG	0	1	2	1	0	0	0	0
CBL	1	1	1	1	0	0	0	0
ISIM	0	0	1	1	0	0	0	0
CRYPTOGAMIC	1	4	5	3	0	0	0	2
PLANT CHEMISTRY	0	0	0	1	0	0	0	0
CNH	1	2	1	2	0	1	1	0
PUBLICATION	0	1	1	0	0	0	0	0
TOTAL	9	30	31	18	0	12	8	5
	88				25			

No. of New Projects starting in 2019 – 20:	6
No. of projects whose tenure are completing in March 2020:	34
No. of on going projects:	9
No. of projects continuing beyond March 2020 (excluding 6 new projects):	14
Total no. of projects:	63